

- (21) Application No 7919203
- (22) Date of filing 1 Jun 1979
- (23) Claims filed 1 Jun 1979
- (30) Priority data
- (31) 9499
- (32) 9 Jun 1978
- (33) Italy (IT)
- (43) Application published
23 Jan 1980
- (51) INT CL³
H05F 3/04
- (52) Domestic classification
H1X 5D
- (56) Documents cited
GB 1530819
GB 1500492
GB 1424554
GB 911787
GB 841147
GB 755368
GB 589911
GB 436257
- (58) Field of search
A4K
A4V
A5R
H1X
- (71) Applicants
D.B.D. S.R.L.
Via Giovanni XXIII^o,
No. 23 - Settimello Di
Calenzano,
Firenze,
Italy.
- (72) Inventor
Leandro Bernardini
- (74) Agents
Mathison, Macara & Co.

(54) Device for neutralising electrostatic charge on hair

(57) A device for treating the hair, comprises a unit operable to emit an ionic flow and an electrical field for neutralising the electrostatic charges on the hair. The device may be combined with brush means (3), and the unit may comprise a piezoelectric generator which is operated by a lever (10) combined with a part of the body of the device which is gripped by the hand of the user, the generator being connected to a point electrode (5) seated in a recess (7).

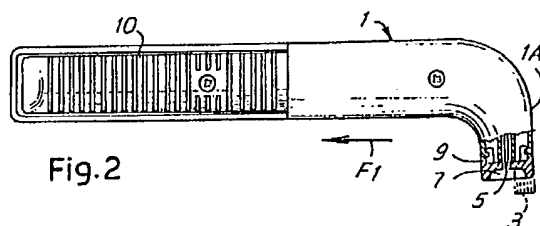


Fig.2

Fig. 1

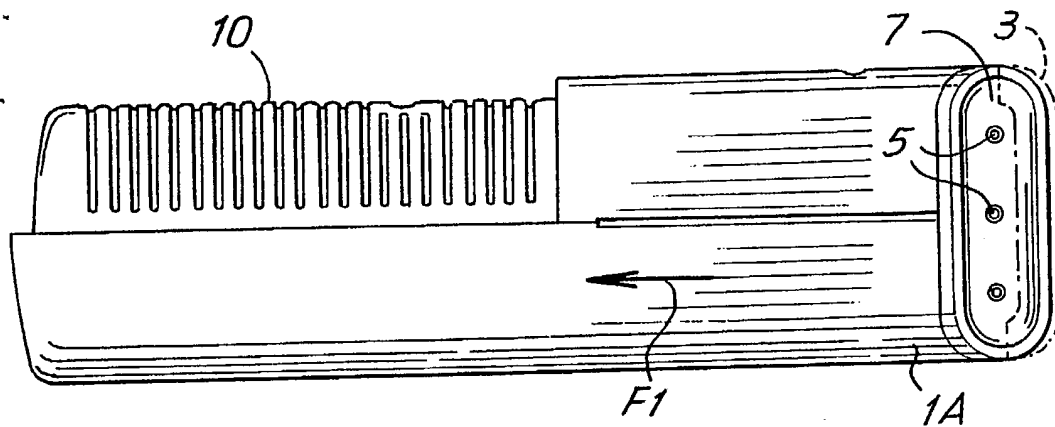


Fig. 2

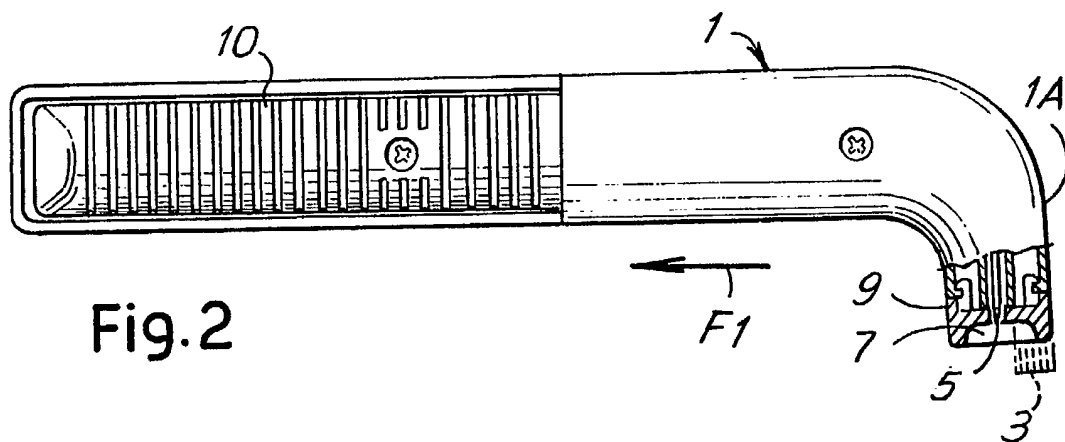


Fig. 3

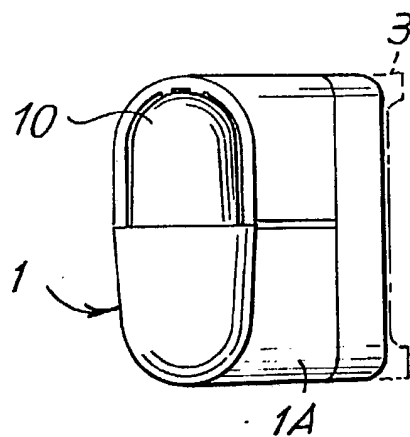


Fig.4

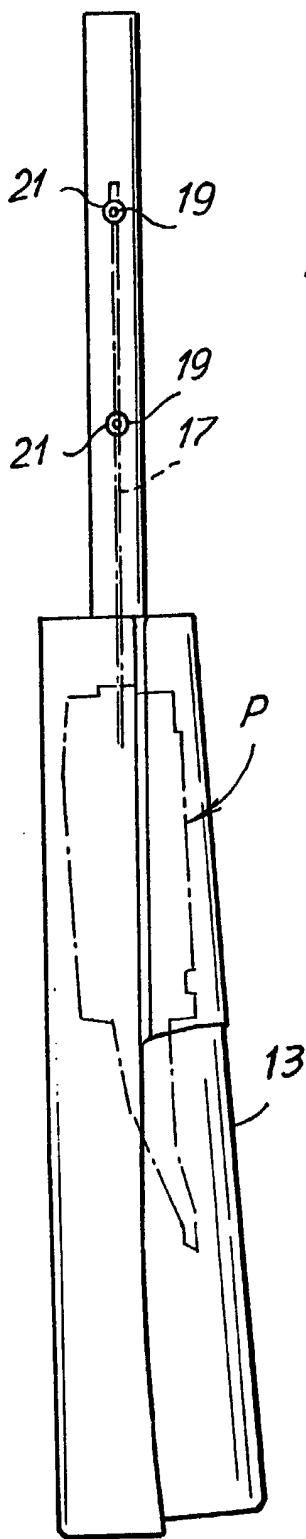


Fig.5

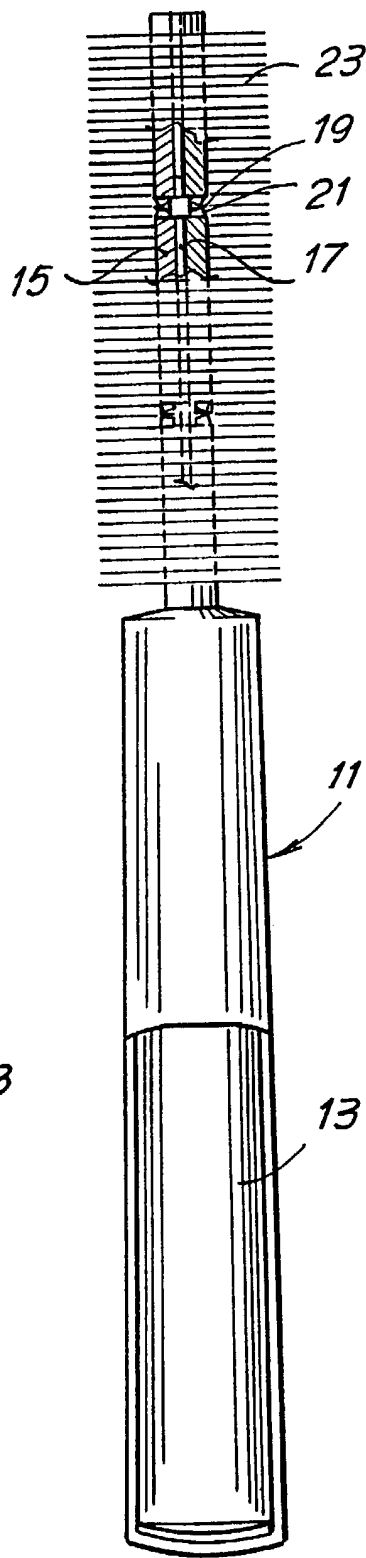
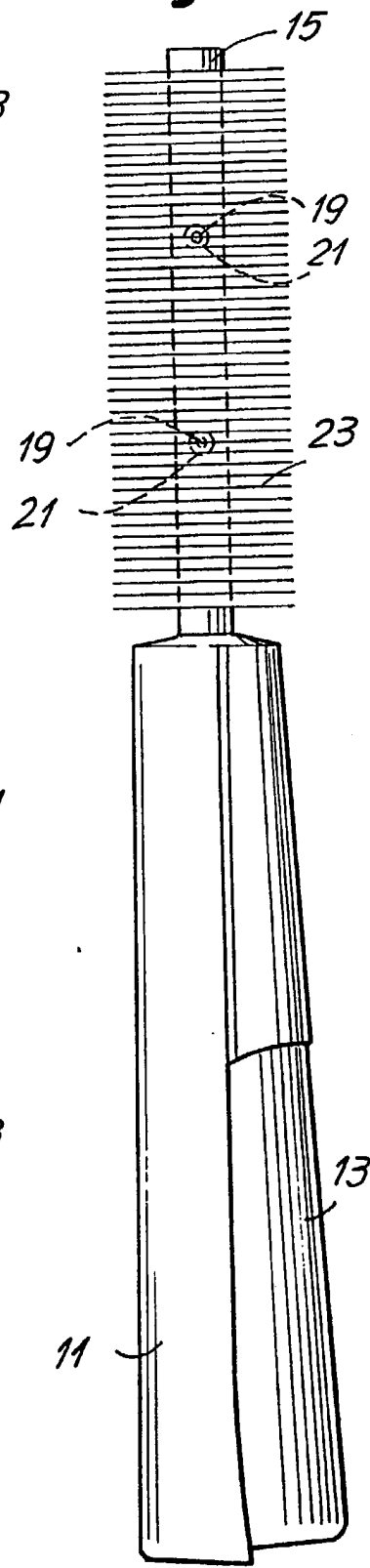


Fig.6



SPECIFICATION

Devices for treating hair

5 The invention relates to devices for treating hair.

When hair is rubbed it tends to become electrostatically charged. In the case of head hair, this frequently occurs when the hair is dried after shampooing, either with a towel or with a hair drier, and the phenomenon can also occur simply by wearing a woollen hat. The effects are particularly noticeable with fine hair. To obviate the drawbacks caused by this phenomenon, it is usual to brush the hair vigorously, which necessarily causes many hairs to break, because they are fragile due to the fact that they are very fine.

According to the present invention, there is provided a device for treating the hair, comprising a unit operable to emit an ionic flow and an electrical field for neutralising the electrostatic charges on the hair.

Further according to the present invention, there is provided a hair brush comprising piezoelectric means operable to neutralise electrostatic charges on the hair.

Embodiments of the invention will now be described, by way of example only, with reference to the accompanying diagrammatic drawings, in which:

Figure 1 is a side elevation of a hair-treating device according to the invention;

Figure 2 is a plan view of the device shown in Figure 1;

Figure 3 is an end elevation of the device shown in Figure 1;

Figure 4 is a fragmentary side elevation of another embodiment of hair-treating device according to the invention;

Figure 5 is a plan view, partly in section, of the device shown in Figure 4; and

Figure 6 is a side elevation equivalent to Figure 4, but showing the complete device.

In the embodiment of Figures 1 to 3, the reference numeral 1 indicates a body having a gripping part and a curved part 1A. The free end of the curved part 1A forms the operative end of the device, and a group of bristles 3 are carried adjacent the rear edge of the operative end as considered in relation to the direction of movement of the device when in use, as indicated by arrow F1. The bristles 3 are adjacent to a set of points 5 (three in the embodiment shown) arranged to emit an ionic flow and an electrical field in order to neutralise the electrostatic charges present on the hair which is brushed by the bristles 3 when the device is moved in the direction of the arrow F1. The bristles 3 constitute the part of the device which is designed to come into contact with the hair and to skim over it. The bristles can either be actual bristles constituting a brush, or material comprising very flexible short bristles, or even a piece of velvet material. The points 5 are contained in respective cavities 7 formed by a terminal support 9 on the body so that the metal points do not come into contact with the hair to harm the skin.

The points 5 are connected electrically with a generator, in particular of a piezoelectric quartz type

or the like, which is operated for example by means of a lever 10 which forms a portion of the gripping part of the body 1.

In the embodiment of Figures 4 to 6, the device comprises a body 11 having, in a gripping part thereof, a lever 13 for operating a piezoelectric generator unit P which is connected to points emitting the ionic flow and the electrical field. A core 15, preferably of cylindrical and tubular form, extends from the body 11 and contains a conductor 17 connected to the piezoelectric generator unit P housed in the body 11, and to two pairs of oppositely-directed points 19 which are contained in bores or seats 21 formed in the core 15. The points 19 either do not project from the core 15, or only do so to a very small extent, and the core 15 carries bristles 23 which constitute a brush-head of cylindrical form.

The device of Figures 4 to 6 is used to brush the hair, and also to discharge electrostatic charges on the hair when the piezoelectric system P is operated by the lever 13. If a different source of ionic flow and electrical field is used, for example a remote generator combined with a motorised rather than manual energisation, the operation of the piezoelectric system can either be switched on or switched off by variously orientating the brush about its axis. It is ensured that the points 19 do not touch the hair or skin, either by locating the points so that they do not project from the core 15, or by using bristles 23 which are relatively rigid so as to prevent the skin from being touched by the points 19 if they do project a limited distance from the core 15.

When the device is constructed for professional rather than personal use, a non-manual generator can be provided for supplying the discharge points, this generator either being combined with the grip or remote from it.

In the device particularly described the ionic flow and electrical field which are generated by the piezoelectric unit, neutralises the electrostatic charges on the hair which means that the hairs neither become attracted to each other nor repel each other in a disordered manner, but instead can be easily put into order by the mechanical action of the brush with the aid of the electrical field which orientates them so that they can be easily handled by the brush bristles. The device may alternatively be constructed without a combined brush part.

115 CLAIMS

1. A device for treating the hair, comprising a unit operable to emit an ionic flow and an electrical field for neutralising the electrostatic charges of the hair.
2. A device as claimed in Claim 1, further comprising brush means for brushing the hair.
3. A device as claimed in Claim 1, further comprising bristle means for contacting the hair, support means supporting the bristle means, and a point electrode carried by the support means and operable to emit an ionic flow between the bristle means.
4. A device as claimed in Claim 3, comprising means defining a seat in the support means for the point electrode, said electrode being at least partly

recessed within the seat such that the electrode will not damage the skin.

5. A device as claimed in any one of Claims 1 to 4, wherein said unit comprises a piezoelectric generating means.

6. A hair brush comprising piezoelectric means operable to neutralise electrostatic charges on the hair.

7. A device for treating the hair substantially as hereinbefore described with reference to the accompanying drawings.

Printed for Her Majesty's Stationery Office by Croydon Printing Company Limited, Croydon Surrey, 1980.
Published by the Patent Office, 25 Southampton Buildings, London, WC2A 1AY, from which copies may be obtained.